RUNNING HEAD: REGIONAL HEALTHCARE INFORMATION ORGANIZATION

Implementation of a Regional Healthcare Information Organization in South Central Texas

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A graduate management project submitted in partial fulfillment for the requirements of the

Army-Baylor program

U.S. Army-Baylor University Graduate Program in Healthcare Administration

December 6, 2007

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ORGANIZATION.

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
07-12-2007	Graduate Management Project	July 2006-July 2007

4. TITLE AND SUBTITLE
Implementation of a Regional Healthcare Information Organization in South Central Texas

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
MICHAEL R. E. BARRY, Maj, USAF, MSC

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Greater San Antonio Hospital Council
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San Antonio, TX 78227-4023

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
US Army Medical Department Center and School
BLDG 2841 MCCS-HFB (Army-Baylor Program in Health and Business Administration)
3151 Scott Road Suite 1411
Fort Sam Houston, TX 78234-6135

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)
34-06

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution in unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The purpose of this Graduate Management Project is to delineate the strategic plan necessary to successfully implement the South Central Texas Regional Healthcare Information Organization (RHIO) under the auspices of the Greater San Antonio Hospital Council and the Greater San Antonio Healthcare Foundation. The strategic planning process used for this endeavor is the Ginter, Swayne, and Duncan process outlined in Strategic Management of Healthcare Organizations (2002). The RHIO concept is not a new concept, however recent advances in technology are now making interconnected health communities a reality. Currently there are no efforts in Texas to connect communities through health information technology (IT). The Greater San Antonio Hospital Council has taken the innovative step toward the development of a RHIO to reach the goals of reducing healthcare costs, improving quality, reducing medical errors, and improving patient safety through interconnected, interoperable health IT, such as the electronic health records (EHR), and personal health records (PHR).

15. SUBJECT TERMS
RHIO, Healthcare, Health IT, Strategic Planning, GSAHF, GSAHC, Regional Health Information Organization, CHIN, Stakeholder, SWOT, IOM, EHR, EMR, PHR

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Education Technician
U	U	U	UU	48	19b. TELEPHONE NUMBER *(Include area code)* (210) 221-6443

Acknowledgments

I would like to acknowledge the entire staff of the Greater San Antonio Hospital Council for their support and encouragement throughout the course of this project. Being made part of their team made this process a wonderful learning experience that I will take into my future as a healthcare administrator. I would also like to thank the faculty and staff of the Army- Baylor program, for their guidance and support, specifically Lt Col Glenn Yap and Dr. Manglesdorf. These two fine scholars provided encouragement and support and are directly responsible for my success.

In addition, I would like to acknowledge my preceptor, Mr. William D. Rasco, FACHE, President and Chief Executive Officer of the Greater San Antonio Hospital Council. Mr. Rasco provided an enthusiasm about this project that pushed me toward excellence. His contacts throughout the region and in the healthcare industry at the local, state and federal level were invaluable in the completion of this project.

I would be remiss if I did not recognize Capt Laura Hurst, USAF, CHE, my partner in crime, fellow Baylor Bear, friend, and fellow Resident at the Greater San Antonio Hospital Council. I could not have asked for a more supportive colleague with whom to share this excellent adventure.

Finally and most importantly I would like to thank my loving wife, Shannon and my kids, Max and Keeghan who continually told me that I can do anything. Their support never failed and their sacrifices were many, but they endured for me.

Abstract

The purpose of this Graduate Management Project is to delineate the strategic plan necessary to successfully implement the South Central Texas Regional Healthcare Information Organization (RHIO) under the auspices of the Greater San Antonio Hospital Council and the Greater San Antonio Healthcare Foundation. The strategic planning process used for this endeavor is the Ginter, Swayne, and Duncan process outlined in *Strategic Management of Healthcare Organizations* (2002). The RHIO concept is not a new concept, however recent advances in technology are now making interconnected health communities a reality. Currently there are no efforts in Texas to connect communities through health information technology (IT). The Greater San Antonio Hospital Council has taken the innovative step toward the development of a RHIO to reach the goals of reducing healthcare costs, improving quality, reducing medical errors, and improving patient safety through interconnected, interoperable health IT, such as the electronic health records (EHR), and personal health records (PHR).

Through the use of the strategic planning process the Greater San Antonio Hospital Council will be able to gain insight into the best course of action to follow in the implementation of a RHIO in South Central Texas. This paper will flow through the situational analysis focusing on the internal and external environments. Next strategy formulation is discussed, followed by implementation and control. In the end the Greater San Antonio Hospital Council will have a clear strategic plan that will guide them through the process of building a new way of providing healthcare that will better serve the patient.

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Introduction

The delivery of healthcare in the United States has long been plagued with fragmentation, inefficiencies and increasing costs. National healthcare expenditures are expected to reach 1.9 trillion dollars in 2006 (Centers for Medicare & Medicaid Services, 2004). Since 1996, health insurance premiums have shown steady increases, with a 9.2 % increase in 2005 (Kaiser Family Foundation, 2005). Many innovations have been implemented in healthcare with the promise of reducing costs; however none have resulted in cost savings. The Institute of Medicine (IOM), in 2001 published *Crossing the Quality Chasm*, a report addressing the disparities in the healthcare system. The IOM called for the adoption of the six aims of a quality healthy care system: Safety, Effectiveness, Efficiency, Patient-centerness, Timeliness, and Equitability (IOM, 2001). In 2004, the President of the United States issued Executive Order 13335 that established the National Health Information Technology Coordinator position in the Department of Health and Human Services (2004). David Brailer, MD was appointed by the Secretary of Health and Human Services and was charged with the implementation of a national health information network (NHIN) and the full adoption of the electronic health record on a national level within the next ten years. The goal is to reduce healthcare costs, improve quality, reduce medical errors, and improving patient safety through interconnected, interoperable health information technologies (IT), such as the electronic health records (EHR), and personal health records (PHR).

The adoption of the EHR and the development of the national health information network will depend on regional health information networks (RHIOs). According to Scalise (2005), RHIOs will be the patchwork that will become the future NHIN. The system is growing; currently there are "more than 100 RHIOs", with many more in development. The largest issue presently for the construction of a RHIO is that there is no "single model. However, in a recent

article Runy (2005) stated that "the primary purpose of a RHIO is to create a network that allows information to move from one end of a community to another".

Conditions Prompting this Study

In August 2005, HealthBridge, a nationally renowned Community Health Information Network, provided an in-depth presentation to the Metropolitan Hospital Association during the American Hospital Association's annual Leadership Summit in San Diego, California. The president and CEO of HealthBridge, Mr. Steffel, stated that the future of healthcare was changing for the better and that Health Information Exchange was the catalyst for change. During the Leadership Summit, Mr. Newt Gingrich, founder of The Center for Health Transformation, stated that "Paper Kills" and there is a need to transform the current healthcare system to a new "21st century intelligent health system" with the use of technology and the electronic health record. One of the projects that Mr. Gingrich's group is working on involves "accelerating the adoption of health IT and electronic health records for the purpose of building an interoperable national health information network that can share accurate medical data in real-time" (Gingrich, 2005).

The concept of interconnected health information is not a new one. In 1997, the IOM stated that,

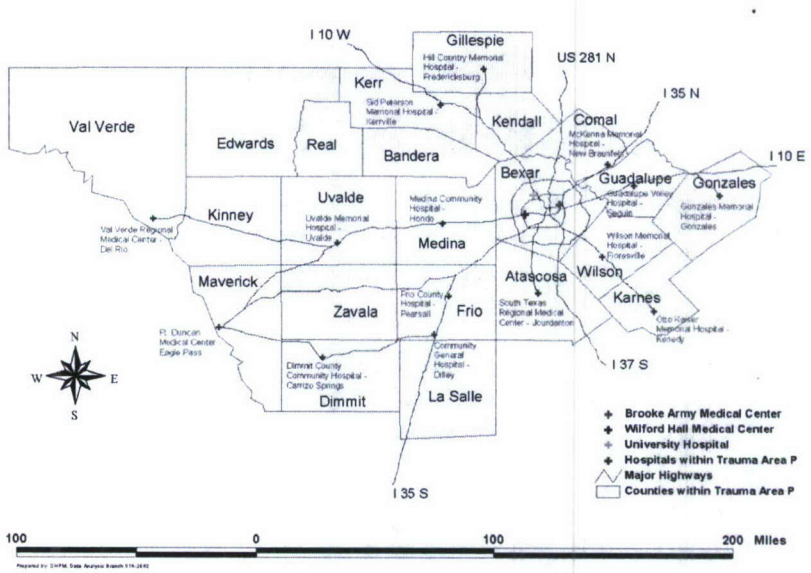
> "In recent years, computerization of patient records has increased at a moderate rate and this trend is likely to continue, particularly as technology improves and becomes more affordable and as the demand for healthcare information increases. If future patient records are merely automated versions of most current records, however, an opportunity to improve a fundamental resource for healthcare will have been lost. For example, in the patient record of the future, the committee seeks the ability to access quickly a list of

current problems, a trail of clinical logic, the patient's health status, and the most recent information about various treatment options for the patient's condition" (p.74).

The improvements in information technology are now realized in 2005 and the cost of these technologies is considerably less today than in 1997. In addition, the renewed national fervor over computerized patient records or EHRs and the desire for an interconnected NHIN has lead to many local and regional healthcare efforts. As a result of this national challenge to transform healthcare the President and CEO of the Greater San Antonio Hospital Council (GSAHC), Mr. Bill Rasco, has taken on the challenge of operationalizing and implementing a RHIO to connect the region's hospitals and healthcare providers.

The region GSAHC supports (fig 1) consists of 22 counties and is approximately equal in square miles to Massachusetts, Vermont, and New Hampshire combined.

Figure 1. South Central Texas Hospital Region



Recent efforts of the council include convening the first ever regional healthcare chief information officer's roundtable and providing informational briefings to the medical society of

San Antonio. Future plans include educational workshops to provide information to healthcare leaders in the region regarding the formation of RHIOs in Texas. These workshops will include demonstrations of the Veteran's Administration Hospital's operational EHR, efforts to define RHIOs, and determine the stakeholders that will be vested in the implementation, maintenance, upgrading and use of interconnected health IT. These efforts have received attention from the Agency for Healthcare Research and Quality (AHRQ) and Texas Representative Charles A. Gonzales, who believes that the formation of a system of RHIOs in Texas would complement H.R. 747, the National Health Information Incentive Act and "improve the quality of healthcare, reduce medical errors, and lower healthcare costs' (Gonzalez, 2005). All of the recent attention to the development of an interconnected healthcare community and the exchange of vital health information to achieve the goal of an intelligent healthcare system of the 21st century in south central Texas requires planning at a strategic level to ensure success of a RHIO in this region.

Statement of Problem

Healthcare in Texas faces the same problems that are indicative of the system as a whole across America. Soaring costs, medical errors, uncompensated care, and a growing uninsured population, to include undocumented aliens seeking care. According to the Texas state comptroller, Texas health insurance premiums for a family are expected to increase by more than $1500 in 2005 (Strayhorn, 2005). The leadership at the federal level understands the importance of health IT on a national scale, and this same passion for improvement must be reflected by Texas healthcare leadership. The south central Texas region healthcare, under the guidance GSAHC, should approach the region's health IT issues by creating a strategic plan that will examine the region's strengths, weaknesses, opportunities and threats with regard to the implementation of a RHIO. A strategic plan for a south central Texas RHIO is the initial step in

fostering an environment of innovation throughout Texas healthcare. Benchmarks created by the south central Texas RHIO will enable other regions in Texas to develop health IT exchanges, that will connect health information across the state. Discussion and development of a RHIO in south central Texas and in other regions is essential in meeting the Presidents goal of having an interconnected national health information network.

Literature review

According to the IOM, recent studies "imply that at least 40,000 Americans die each year as a result of medical errors". This figure suggests that more people die as a result of medical errors than from motor vehicle accidents (1997). In addition, medication-related errors result in increased hospital cost measuring in the billions on a national level (IOM, 1997). The National Committee for Quality Assurance (NCQA) reported in 2005 that quality gaps between levels of care have resulted in 39,000 – 83,000 deaths and billions of dollars in medical costs (NCQA, 2005). According to Larsen (2005), the IOM report *To Err is Human* stated that "medical errors are the fourth or fifth leading cause of death, and by simple inference, the leading cause of avoidable death". These reports paint a grim picture of healthcare in the United States pushing the issue of healthcare IT to the forefront of national policy.

The tipping point for health IT came in 2004 with the issuance of Executive Order 13335, in which the President called for the development of the Office of the National Coordinator for Health Information Technology (ONCHIT) under the Department of Health and Human Services (HHS). The order charged ONCHIT with the implementation of a national EHR and the development of NHIN within ten years. As a result of the 2004 Executive order, a number of bills appeared in the 109th congressional session in 2005, all addressing the need for increased use of health IT, and the interoperability and portability of health information. For

example, the *Wired for Healthcare Quality Act (S. 1418),* brought before congress by Senator Enzi and co-sponsored by Senators Kennedy and Clinton, proposes "to enhance the adoption of a nationwide interoperable health information technology system and to improve the quality and reduce the cost of healthcare in the United States" (S.1418, 2005, p.1). *The National Health Information Act of 2005 (H.R. 747)*, brought before the House of Representatives by Representative Gonzalez (D-TX), seeks to amend Title XI of the Social Security Act to achieve a national health information infrastructure, and to amend the Internal Revenue Code of 1986 to establish a refundable credit for expenditures of healthcare providers implementing such infrastructures" (H.R.747, 2005, p.1). Other health IT legislation, introduced to both the House of Representatives and the Senate, address the many barriers that may impede the adoption of health IT at the local, regional, and national levels.

A number of barriers exist for the implementation of a RHIO in south central Texas. First, the cost of technology, while it has decreased dramatically over the last ten years, can be prohibitive for many small hospitals and small physician groups, especially in the rural setting. Many RHIOs have begun operations around the country relying on initial grant or seed money from state and federal agencies; however the long-term financing for these "demonstration projects" has yet to be fully addressed. Another financial barrier to the adoption of health IT, in the form of a RHIO, is the cost/benefit for providers. According to Middleton (2005), it is the provider groups and hospitals that ultimately pay for the technology while only achieving minimal returns. The benefits go to other stakeholders in healthcare, primarily the payers, specifically the health insurance companies. This will remain an insurmountable obstacle in the development of a regional health IT initiative, unless there is a common drive to share in the investment of IT and to disburse any gains equally across the industry.

A second barrier is the nebulous ambiguity inherent in RHIOs development. What defines the region? Who are the major players in a RHIO? Where is the money for the acquisition, maintenance and upgrade of the system? What is the impact on provider revenue during the implementation phase? How disruptive will implementation be to the delivery of healthcare as a result of installation and training? These are just a few of the myriad questions that arise when the discussion of implementation begins (Middleton, 2005). These concerns must be addressed in the planning phase; the start is a solid strategic plan as the foundation.

The competitive environment that exists within the healthcare industry is a third barrier to the initiation of a RHIO. Ranging from large hospital systems through small community hospitals to physician groups, these stakeholders will not share information of a proprietary nature. This is seen more in the for profit hospitals that do not want to lose their competitive edge in the community.

Finally, some healthcare regulations tie the hands of hospitals and physicians attempting to modernize and connect using health IT. This is a barrier that will require federal intervention. According to Bernstien and Belfort (2005) it is not necessary to wait for changes to current laws and regulations to begin the development of a RHIO. Clarification of these federal laws will enable rapid adoption of health IT and the implementation of RHIOs across the nation. Current anti-kickback laws and the Stark law can cripple any attempt at RHIOs development. These regulations keep hospitals from assisting physician groups in their desire to adopt EHR and RHIO projects for fear of violating anti-kickback laws. Recent exceptions to the Stark law for community health networks do not have the specificity required to facilitate the growth of health IT. The laws and regulations that exist in the healthcare industry have forced many communities to become more and more creative in their pursuit of a fully interconnected, interoperable health

delivery system. In some cases the RHIO is being used as a centralized hub reducing the anti-kickback and Stark law issues by funneling money from the hospital systems through the RHIO, ensuring that it is redistributed equitably to other stakeholders (Bernstein & Belfort, 2005).

Purpose

The GSAHC membership is diverse, ranging from large urban hospital systems to small rural community hospitals. To improve the quality of care, reduce medical errors, and reduce costs have made the establishment of a RHIO for south central Texas an initiative of GSAHC. The purpose of this paper is to provide a strategic plan to implement a RHIO for this region. The plan will utilize the thinking map of strategic management (appendix A) as outlined by Ginter, Swayn, and Duncan (2002).

Methods and Procedures

The development of the plan involved an examination of the organizational setting, and the completion of a stakeholder's analysis to determine the need for this plan. This project also includes a situational analysis that examines the internal and external environments using tools that examine the internal strengths and weaknesses of the organization and the external opportunities and threats the organization must capture or avoid accordingly. In addition, this plan includes the directional strategies, which are the mission, vision and values of the organization.

Research Plan:

The main driver for this project was to seek new innovative ways to improve the delivery of healthcare in the Greater San Antonio region. The strategic plan for the development of the South Central Texas RHIO will follow a systematic approach investigating a strategic analysis of the region to include the forces that affect the healthcare industry, to include: technological,

social, regulatory and political, and economic forces. The strategic analysis is the result of participating in numerous forums (physician executive, nurse executive and Chief Information Officer Forums), and through working with the GSAHC staff in the analysis of the uninsured and providing detailed information on interconnected communities to healthcare leaders throughout the region.

Situational Analysis

The first step in developing a strategic plan is to conduct a situational analysis. In order to obtain a thorough understanding of the situation, Ginter et al suggest beginning by conducting three separate analyses. The external environmental analysis focuses on "what the organization should do." By examining external opportunities and threats, GSAHC will be able to seize potential opportunities while at the same time position itself to avoid potential threats. The next step in the situational analysis is the internal environmental analysis which examines the internal strengths and weaknesses of an organization, allowing it to determine "what it can do." The final phase in the situational analysis is the development of the directional strategies: Mission, Vision, and Values. The directional strategies clearly explain "what the organization wants to do" (2005). In the case of the south central Texas RHIO being developed by GSAHC, the RHIO will be a separate entity under the auspices of GSAHC and will have to define what it should, can, and wants to do.

The situational analysis presented addresses the strengths and weaknesses of GSAHC and The Greater San Antonio Healthcare Foundation (GSAHF) through a detailed Strength, Weakness, Opportunity, and Threat (SWOT) analysis that identifies the external opportunities and threats and the internal strengths and weaknesses. The situational analysis uses the SWOT

analysis to provide an in-depth study of both the external and internal environments affecting the region.

External Environmental Analysis: Stakeholder analysis is "based on the belief that there is a reciprocal relationship between an organization and certain other organizations, groups, and individuals" (Ginter, 2002, p. 81). In addition to the stakeholder's analysis, this project will incorporate a competitors' analysis following Ginter's strategic thinking map for the service area competitors' analysis (Appendix D). The external environmental analysis requires leadership that is outward thinking with leaders that seek opportunities for their organization. The goal of this analysis is to examine factors in the general environment, the healthcare industry and competitor strategies that have impact on the internal workings of the organization. Ginter suggests that a good starting point is to apply A.H. Mesch's concept of asking the following questions to determine if the analysis is even warranted:

1. Does the external environment influence the capital allocation and decision making process?
2. Have previous strategic plans been scrapped because of unexpected changes in the environment?
3. Has there been an unpleasant surprise in the external environment?
4. Is the competition growing in the industry?
5. Is the organization or industry becoming more marketing oriented?
6. Do more and different kinds of external forces seem to be influencing decisions and does there seem to be more interplay between them?
7. Is management unhappy with past forecasting and planning efforts?

(Ginter, 2002, p.55-6).

Ginter suggests answering any of these questions in the affirmative is a c all for the completion of an external analysis. When these questions are applied to the implement tion of a RHIO in south central Texas, a number of these questions can be answered with a resou nding yes.

Once the need has been established, selection of the right tool fo the analysis must be chosen. In the initial phase of this strategic plan, because the concept of he interoperability of health information in many cases is still in the demonstration phase of d velopment, a tool that simply scans the environment for change and monitors those changes is he best approach. The stakeholder analysis (appendix C) is ideal for the purposes of this initial strategic plan. Ginter states, "the stakeholder analysis is based on the belief that there is a reci rocal relationship between an organization and certain other organizations, groups, and inc ividuals" (2002, p. 81). A RHIO is an organization that seeks to interconnect healthcare entities, community players, and patient/consumers in order to share health information to improve the de livery of healthcare in terms of improving quality, reducing costs and eradicating medical erro s. In the greater San Antonio area the number of potential stakeholders is staggering and the roposed stakeholder analysis (appendix C) is a broad cut at the immense healthcare industry n San Antonio and the surrounding area. Because of this relationship between the RHIO and th various stakeholders, this tool will work well in determining the effects of the external enviro ment and allow the organization to keep a watchful eye on any changes that may produce fa vorable opportunities and avoidable threats.

An important aspect of the external environmental analysis is th service area competitor analysis (appendix D). Once complete, the service area competitor anal sis will further illuminate the complexities of the service area. This analysis provides in formation on the service categories, the area demographics, and examines the competitors in the rea.

Once the service area is defined, a detailed structure analysis must be performed. Michael E. Porter's five forces model exposes the competitive nature of the industry by looking at the bargaining power of both suppliers and buyers, and the threat of new entrants and substitutes (appendix D, tab A) (Ginter, 2001). As applied to the South Central Texas RHIO implementation efforts of GSAHC service area competitors do not exist and the threat of entrants is relatively low. Since there are no competing efforts in the region the threat of substitutes is also low. The bargaining power of the suppliers in this endeavor is extremely high. GSAHC will be the oversight body of the South Central Texas RHIO, and will thereby control much of the supply. In addition, the fact there are no regional substitutes increases the bargaining power of GSAHC. The final part of the Porter's analysis points to the bargaining power of the buyers. The buyers in this case are the stakeholders that will use and ultimately benefit from this project, therefore their bargaining power is also quite high.

Internal Environmental Analysis: The next step in the situational analysis is the internal environmental analysis. According to Ginter, the internal analysis addresses how the organization creates value for the various stakeholders addressed in the external analysis. Using the organizational value chain, outlined by Ginter, to address the strengths and weaknesses identified in the SWOT analysis will enable the categorization of the strengths and weaknesses. Once this is done they can be classified and evaluated for competitive relevance allowing the organization to focus on those that will lead to a competitive advantage and improve on those that can be viewed as competitive disadvantages (2002).

Directional strategies: The final phase of the situational analysis is the development of the organizations mission, vision, and values or directional strategies. It is imperative that GSHAC know what it can do and what the limitations are prior to the formulation of strategy for

the implementation of a RHIO in south central Texas. The directional strategies listed above must be addressed by GSAHC before moving to strategy formulation. According to Thielst (2006), this is accomplished by communication with the various stakeholders and examining the need in the community as a whole. Currently GSAHC is positioned to develop the relationships with the stakeholders and form a team to build governance for the South Central Texas RHIO to build and nurture these directional strategies.

Strategy Formulation

According to Ginter, the formulation of the strategy goes through a four step process before moving to implementation strategies. First, the development or reaffirmation of the directional strategies: Mission, Vision, and Values must be completed prior to examining the adaptive strategies, the next step in the process. Adaptive strategies focus on the "scope of the organization" and examine ways to expand, contract or maintain that scope (2005). The adaptive strategies are linked back to the directional strategies as a means of reaching the vision and goals of the organization (Ginter, 2005).

The next step in the process is market entry strategies, which give us a way ahead for the expansion or maintenance of the organization scope. Ginter provides that the market entry strategies are not used in the contraction of an organizations scope.

The final step in strategy formulation that leads to implementation strategies is the identification, evaluation, and selection of competitive strategies. These strategies identify the organizations strategic posture and the position of the organization in consideration of other organizations in the market.

Strategy Implementation and Control

The final two phases of the strategic plan will focus on implementation and control. Implementation strategies revisit the organizational value chain mentioned earlier. These strategies are divided into two categories: Service delivery strategies and support strategies. The service delivery strategies concentrate on pre-service, point-of-service, and after service. Pre-service strategies include marketing and marketing research of the RHIO, target market, services offered, pricing, promotion, and distribution. The primary goal of the pre-service strategies is to identify potential users and beneficiaries of the RHIO, marketing and promoting to those groups. Point-of-service strategies are aimed at the clinical operations as well as marketing. This strategic plan will focus on the RHIO's relationship to clinical outcomes in a number of different venues, to include: Pre-hospital care (emergency services), delivery of care in the hospital or clinic setting, and post-hospital care such as home healthcare, as well as public health and public health surveillance. The marketing aspect of the point-of-service strategies includes stakeholder satisfaction, product development, and market development. The final part of the service delivery strategies are the after-service strategies that focus on follow-up, billing, follow-on (Ginter, 2002).

Support strategies involve the organizational culture, structure, and strategic resources, such as financial, human, technology and information. This area is critical to the development of this strategic plan, because according to Ginter (2002), these strategies (service and support) must be "consciously aligned" in order for the overall plan to be successful (p. 359). The plan should fit into the culture and structure. If not, it will require extensive change in the case of implementing a RHIO in this region because of the wide variety of stakeholders.

Finally, the strategic plan will address strategic control of the RHIO to ensure that mechanisms are in place to maintain, change, or update the strategies, goals, or vision. Ginter states, "control involves agreeing upon objectives, measuring performance, evaluating performance against the objectives, and taking corrective action" (2005, p. 429). This is the logical maturation of this RHIO implementation strategic plan because it is important to ensure the proposed strategy will get us where we want to go. Strategic control can be an early warning system of a disease in the system that might throw the strategy of course. In addition, strategic control will enable RHIO managers to move in to troubleshoot any deviations in the implementation.

Discussion

The Greater San Antonio Hospital Council (GSAHC) and its non-profit counterpart the Greater San Antonio Healthcare Foundation (GSAHF) are the best fit to initiate the development of the South Central Texas Regional Health Information Organization. This strategic plan will involve bringing industry leaders together to form a collaborative environment for sharing health information. The ultimate goal of this plan will be to create a Regional Health Information Organization for the south central Texas region. The process of developing this plan for the development and employment of the South Central Texas RHIO, will allow GSAHC to have a clear picture of the stakeholders, the barriers to implementation and offer alternative strategies that will ultimately allow community leaders, in both the general environment and the healthcare industry, to work together to reduce healthcare costs, improve quality of care and reduce errors that plague the industry.

The Organizational Setting

In order to begin the ground work for a strategic plan for implementation of a RHIO in south central Texas, it is imperative to identify the forces within the healthcare environment, and the general environment, which impact the delivery of healthcare. These forces include: technological, social, regulatory, political, economic, and competition.

Technological forces.

New technologies in healthcare information have emerged in recent years making the concept of interconnected healthcare communities not only a possibility but a reality. In south central Texas there are a number of stakeholders in the technology field that see the importance of a RHIO in the region and are willing to work with the healthcare industry to provide better healthcare through technology to the number one stakeholder: the patient.

Social forces

Three underlying social forces have a profound impact on the healthcare industry in the region. The issue of the uninsured and the underserved in rural areas of the region drive the need for an interconnected health IT community. In addition, the myriad of for-profit and not for profit healthcare organizations in south central Texas provides for a difficult scenario when dealing with the bottom-line of both types of organizations.

Regulatory and Political forces

Stark rules impose draconian barriers to innovation in healthcare systems in that they generally prohibit the transfer of funds from one provider sector to another. For example, some hospital systems desire to subsidize staff physicians with HER set-up. Stark rules barred this exchange. Recently these rules have been made less restrictive and now allow the sharing of software, but still prohibit the subsidizing of the critical component: the hardware.

Anti-trust rules prevent provider entities from sharing informatio n about charges and fee structures because of concerns about price-fixing. This has created a cul ure of secrecy and paranoia among providers, at all levels of healthcare delivery, about any kind of information sharing.

The Health Insurance Privacy and Portability Act (HIPPA) was c esigned to enable employees to transfer employer-based insurance coverage from one job o another to eliminate the problem of job-lock because of the risk of insurance coverage loss re lated to change of employers. Lobbying by the insurance industry changed the emphasis of this law from portability to privacy and the issue of insurance portability continues to plague the healthcare industry. The privacy component of HIPPA is actually an enabler for the development of a RHIO because it established standards and rule for the sharing of sensitive individual hea th information at a federal level. Without HIPPA the development of a RHIO would be far more difficult because of the lack of standardization of security, and liability regarding the transfe of sensitive health information.

Understanding the forces that affect the external environment is an important step. By identifying the impact of each of these forces, GSAHC will be able to st er the situational analysis, a critical step in the implementation of the South Central Texas RHIO. The situational analysis, involves the external and internal environmental analysis and the development of the directional strategies (mission, vision, and values) that the organization will follow. In order to begin, a thorough examination of the organization must be accomplished through a SWOT analysis (appendix B). The SWOT analysis provides vital information on the strengths and weaknesses inherent to the organization and the opportunities and threats that can have a profound effect on the success of the organization.

Situational Analysis

External Environmental Analysis:

Opportunities and Threats: The initial step of this analysis comes from the opportunities and threats identified in the SWOT analysis (appendix B). Presidential s pport of the National Health Information Network and electronic Health Record (EHR) imple nentation leads a lengthy list of opportunities; followed by the ONCHIT's drive for regio al implementation of health IT, joint venture possibilities with area technology leaders and wi h University of Texas Health Services Center, AHRQ grants, Federal and state funding possibi ities. Other opportunities exist in the already running VA EHR and improvement da a quality.

The threats faced by GSAHF in the implementation of the South Central Texas RHIO comprise a smaller list; however it emphasizes the considerable challeng e involved with this venture. The lack of support from rival hospital systems and physicians lue to cost of implementation, and the competitive nature of for profit organizations p esents a major hurdle for GSAHF to overcome. The potential for a larger, more powerful prov der entity taking over the RHIO is also a threat to the development of the South Central Texas RHIO under the GSAHF umbrella. In addition, existing Federal and state regulations, su h as Stark II, anti-trust laws, and the Health Insurance Privacy and Portability Act (HIPPA), ha e the potential to stymie the efforts to create an environment able to freely share health informati n across the region. Other threats to the development include the lack of data beyond initial emonstration projects, no long-term financial forecasts, border health issues, and rapid area po ulation growth.

Stakeholders Analysis: The initial circle of the stakeholder strate gic thinking map (see Tab A of appendix C) includes the customer/patients and GSAHC. The next circle of stakeholders includes larger primary entities; such as UTHSC and large Hospital systems

(CHRISTUS Health), followed by regional laboratory and pharmacy services, imaging centers, specialty and ambulatory surgical care centers, Department of Defense (DoD) and Veteran's Administration (VA) facilities, rural community hospitals, skilled nursing facilities, home health agencies, nursing homes, large, small Group and single (solo) physician practices, and the Bexar County Medical Society. Finally, the stakeholder strategic thinking map shows possible contracts, affiliations, and partnership opportunities with Southwest Research Institute, Batelle, third party payers, self-insured employers, the San Antonio Chamber of Commerce, The Texas Hospital Association, and the Texas Medical Association.

Preliminary Service Area Competition Analysis: Service Area Categories are large urban hospital systems, rural community hospitals, healthcare providers, regional and local laboratories, imaging centers, pharmacies, and third party payers. The service area is comprised of the 22 county region represented by the GSAHC hospital membership and currently served by GSAHC. The service area profile outlines the healthcare demographics, including available healthcare personnel, general trends in demographics, and community health indicators. Of 33,094 primary care physicians registered in Texas, 2,682 are practicing in Bexar County and an additional 560 are outside Bexar County, while still in the 22 county region served by GSAHC. Of the 132,084 Registered Nurses, 11,336 are in Bexar County, while 2,156 are in the region outside Bexar County. The population of Bexar County (2002) is 1,442,244; 703,102 are male and 149,356 are over 65 years of age. The total 22 county region has 2,056,721 people of which 1,007,969 are male and 233,499 are over 65 years of age. The State of Texas denominators are 21,779,893 people; 10,840,194 are male and 2,139,554 are over 65 years of age.

Death rates for heat disease (persons/100,000/year) is 258.4 for Bexar County; 239.3 for the region, and 191.8 for the entire state. Live births for Bexar County equal 25,023, for the

region 33,742, and 372,369 for the state of Texas. The fertility rate (live births/100,000/year) for Bexar County is 76.0, 73.68 for the region, and 76.1 for the state. Texas healthcare expenses per 1000 population in 2004 were $1436.7. Outpatient visits per 1000 population were 1442.5 and inpatient visits per 1000 population were 111.9.

An integral part of the service area competition analysis is the service area structure analysis. In this strategic plan, Porter's analysis tool (see Tab A to appendix D) was used to provide the service area analysis. Porter's tool allows the examination of the threat of potential entrants to the market and the threat of possible substitutes. In addition, it enables the assessment of the bargaining strength related to suppliers and buyers. There are no significant new entrants anticipated and the barriers to new entrants are very high. A renewed fervor regarding health IT in the U.S. and current efforts Texas being local and specific, make the environment for the deployment of a RHIO one without a specific threat from new entrants.

Suppliers for the regional management of healthcare information do not currently exist; therefore GSAHC and GSAHF are uniquely positioned as the front runners in providing oversight for implementation and control. This foothold is a tangible bargaining strength for GSAHF. Alternatively, the potential buyers of such information services are widespread; including metropolitan, regional, and rural hospitals, physician groups, individual physicians, diagnostic centers, insurers, employers, and the patients.

While a potential threat to a RHIO takeover by a large health system entity exists, there is no one entity that can be effective. An independent orchestrating entity is needed to engender trust and cooperative participation among buyers with variant agendas. The GSAHC and GSAHF are unique entities in this market place and well-positioned to be the catalyst and organizer of the South Central Texas RHIO. The growing influence of RHIOs within the global

healthcare industry within the region will allow all the stakeholders to come together with specific and common goals; to organize the delivery of healthcare utilizing existing technologies to better care for the regional population, and secondarily to together mobilize necessary resources to get it done.

The final step in the Service Area Competition Analysis is the competitor analysis. Locally, the UTHSC university healthcare system may pose a credible competitive threat to the GSAHF initiatives to establish the South Central Texas RHIO. Within the region, there is no identifiable competition. At the Federal level, efforts to accelerate the National Health Information Network may be, however inadvertent, a competitive venture in the region.

Internal Environmental Analysis: The internal environment is concerned with the strengths and weaknesses of GSAHC and GSAHF. The preliminary SWOT analysis findings, essential for RHIO development, identified numerous strengths, including strong support from the GSHAC board of Directors and membership, the Physicians' executive forum, local healthcare community, and local political leaders. Weaknesses identified included the lack of sufficient financial resources, operational RHIO expertise and other resources to support RHIO implementation.

Directional Strategies:

Mission: The mission of the South Central Texas RHIO is to provide a fully interoperable health information network to create an interconnected healthcare delivery system for South Central Texas.

Vision: To create, using Health Information Technology, a cooperative healthcare system for South Central Texas, which will enhance quality, improve patient safety, and provide a foundation for a statewide healthcare information network.

Values:

- Patients are stakeholders
- Protecting patient safety
- Reduction on undue duplication
- Timely communication of critical health information across k ey stakeholders

Strategy Formulation

Once the situational analysis is complete and there is a thorough understanding of both the internal and external environments of the organization and the direct onal strategies are set, developing the strategies is the next step. First, we begin with adaptive s rategies. In this phase of the strategic plan a threat, opportunities, weaknesses and strengths (TOWS) analysis was conducted (Appendix E). The efforts by GSAHC were found to be in th future quadrant of the analysis leading to an expansion of scope adaptive strategy. As there cu rently are no RHIOs operating in south central Texas, GSHAC should consider an expansion of scope adaptive strategy to include vertical integration, market development, product de elopment and penetration. Next GSAHC, will have to invoke many of the market entr strategies as outlined by Ginter, which include:

- Developmental Strategies
    - Building Leadership through Internal Developme nt
- Purchase Strategies
    - Financing through Venture Capital Investment
- Cooperation Strategies
    - Forming Alliances

(Ginter, 2002, p. 217).

The current environment in the Greater San Antonio area for IT development in the healthcare sector has seen numerous grass roots systems implemented in piecemeal fashion. Scattered, fragmented, and essentially independent efforts across a wide range of entities are in various stages of development. There is minimal interagency collaboration. Large and small entities, alike, are going in their own direction, driven by their own particular environmental needs. These start ups have entrepreneurial characteristics that have involved seed money, start up grants, reinvestment of marginal income, or reallocation of internal budget resources. As a result of these individual efforts and the proliferation of electronic healthcare records, there are no two systems that look alike.

Apart from the critical stake that consumers/patients have in the South Central Texas RHIO, the provider entities are varied in their healthcare missions and the range and scope of their services. Their IT movements are motivated by their individual perceptions and characteristics of their particular needs, as well as their overall comfort level with the ever changing aspects of healthcare IT. These variant provider stakeholders, include private, for profit entities, public, and "quasi"-public not for profit entities (i.e. Christus Health System). There are significant competitive issues that create barriers to trustful sharing of information and other realms of cooperation. In addition, provider entities are focused on their particular mission, their survival and growth. Many do not see a clear advantage to sharing data or resources to enable a larger umbrella organization.

A challenge is to provide the leadership of the South Central Texas RHIO that will educate potential stakeholders on the long run value to their particular patient constituencies and to themselves as active participants. The Greater San Antonio Hospital Council can be the creating "champion' entity to drive the development through its foundation, GSAHF, a 501(c) 3

independent organization, which is well placed to orchestrate implementation of the various elements of this strategic plan.

Above all others there are three key issues to consider, in order to overcome the identified barriers, threats, and obstacles: They are:

- Leadership (internal development) and Identity
- Financing
- Alliance Development

These three key market strategies to this strategic plan must be undertaken in a stepwise fashion, while allowing for some considerable overlap in the timeline.

Action Plan (Strategy Implementation and Control)

Leadership:

Leadership and identity development are internal development issues that are the initial hurdle in the development of a RHIO. A strong, respected, competent, and charismatic spokes person is critical to champion this initial phase. Leadership must make the South Central Texas RHIO idea known as well as its actual existence felt, initially among key stakeholders, whose influence, once onboard will bring others onto the team.

Initial RHIO infrastructure will require governance, a carefully selected board of committed believers cutting across a variety of related professional disciplines and the community at large. Their job will be to energize and educate potential stakeholders, to convince them that the RHIO development serves their particular best interests in critical ways important to their success, survival, and market share. They will create the staffing structure, select and train talented operational support staff, thereby creating an internal culture of visible, palpable, and integral information support service for target stakeholder players. While engaging this

essential leadership and identity development, the leaders early on must ackle the second major issue of financing.

Financing

Entrepreneurial approaches to financing IT have been highly effe ctive and highly variable from entity to entity, depending on their particular environment s. These approaches cannot be counted on for the establishment of the South Central Texas R HIO or for its subsequent sustainability. While seed money and grant seeking are appr priate for initial RHIO start up (planning and governance building), they cannot be counted on o enable the RHIO to encompass, integrate and orchestrate all the interoperable complexities c f its variant stakeholders for the long-term.

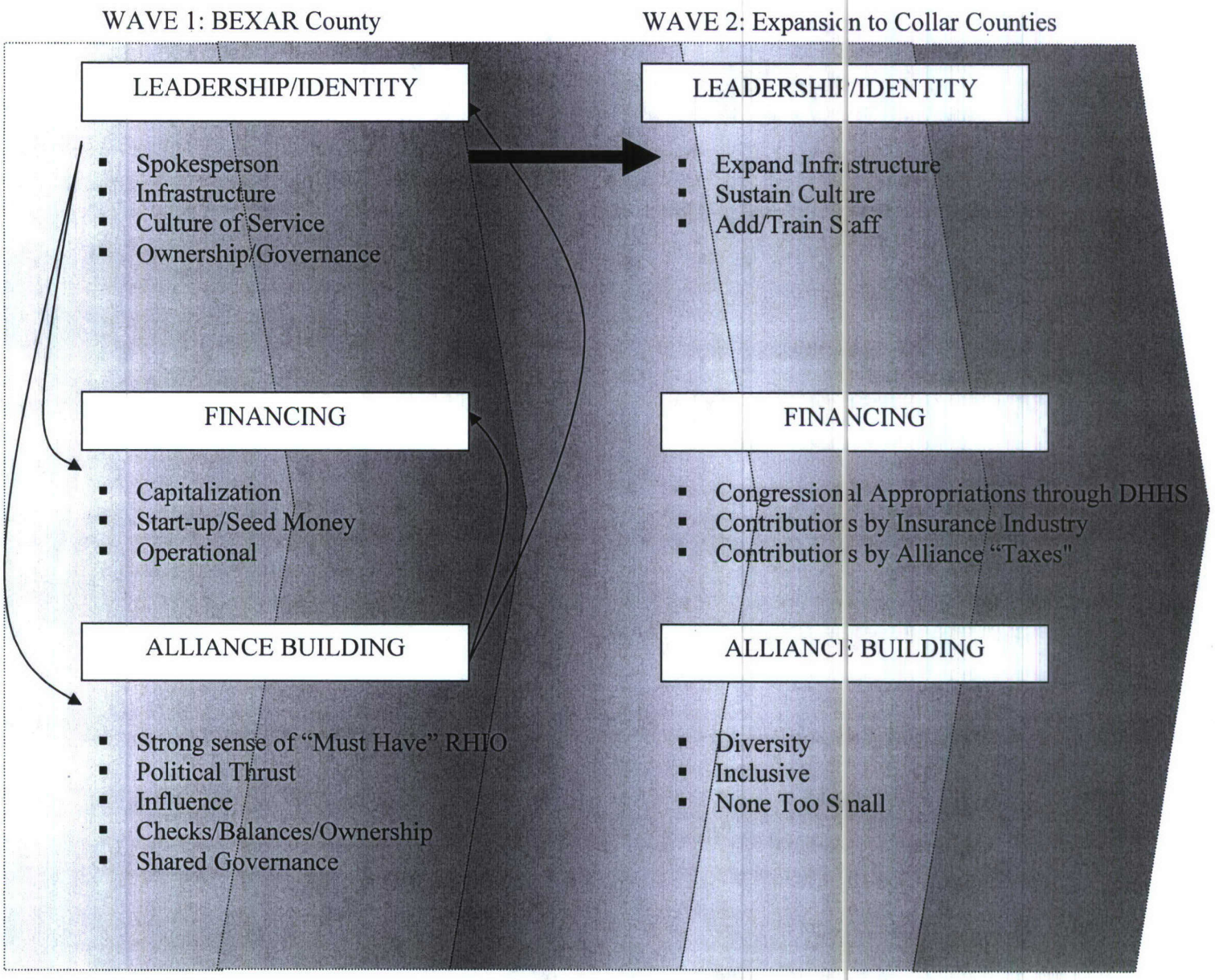
An example of successful federal grant funding is the Communit y and Migrant Health Center covered under section 330 of the Public Health Services Act. For many years the federal government has appropriated and reauthorized large amounts of money o start up and provide operational support for a notional network of community health centers CHC). These funds are awarded to applicant CHCs through the Health Resource and Services A dministration (HRSA), a critical financing arm of the U.S. Department of Health and Human Ser ices (DHHS).

Next to initial leadership development, the acquisition of a stable source and flow of start-up and operational funds of the same type is desperately needed to make RHIO's across the U.S successful as the Community and Migrant Health Centers. This nee l, if forcefully articulated by the leadership of the South Central Texas RHIO can mobi ize political arms of all the potential stakeholder entities and bring them together around this go l in common

Alliance Building

Once the initial thrust towards stable current and ongoing finance is underway, the *first wave* of the alliance building process must be initiated. This will, in turn, provide its own added stakeholder specific impetus in the political efforts orchestrated by the RHIO to secure sustainable funding streams for the RHIO. Large provider entities within the healthcare sector; such as University of Texas Health Sciences Center, and CHRISTUS Health System will be targeted in the initial wave of alliance prospects. A diverse cluster of such larger, potentially influential entities must be engaged in the early phases of development to create a vital system of checks and balances among powerful stakeholders, so that no *one* system will be perceived as taking over the operations of the South Central Texas RHIO. It is imperative that the South Central Texas RHIO be seen as belonging to and being part of all the participating and benefiting provider entities. Once this critical wave has started to solidify the foundation of the RHIO, the leadership can then turn to other stakeholders, such as the DoD and VA systems. As the stakeholder alliance grows, the RHIO infrastructure must continue to grow in scope and efficiency, while always maturing its internal culture of service and support. Another wave of leadership and identity initiatives, continuing political action towards expanded fund streaming, and further inclusion of myriad allied entities leads to a cyclic spiral (see figure 2) towards full regional operability from the initial core (Bexar County), through the collar counties, and finally out to the most remote rural outreach.

Figure 2 - Action Plan Cycle

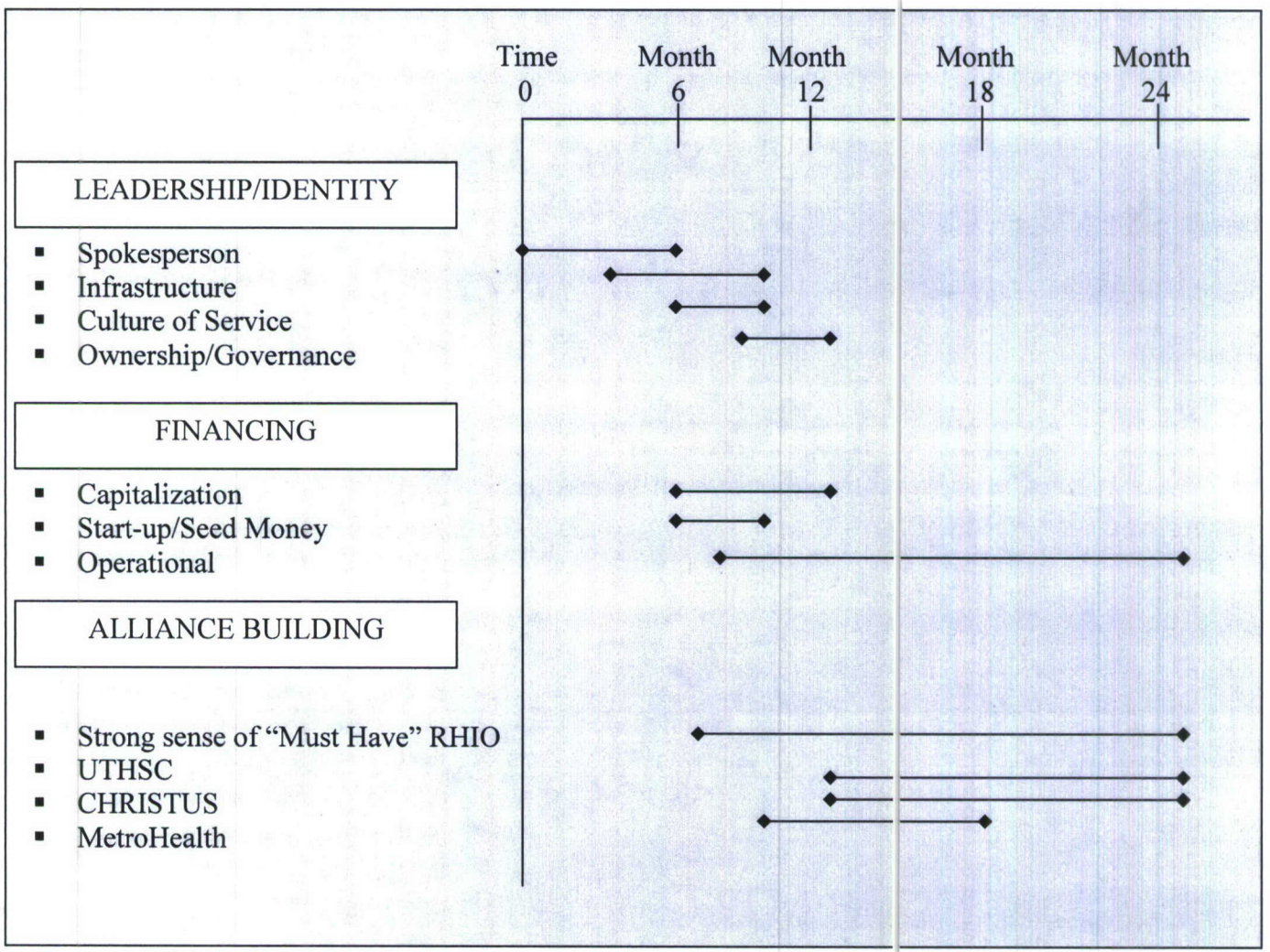


Note: Wave three should be accomplished following the full implementation in the collar counties; however there could be some overlap depending on rural areas eager to become part of the team.

Timeline

The timeline for wave one of the South Central Texas RHIO is an 18-24 month timeframe with many overlapping projects and milestones. It is imperative that wave one be completed prior to moving into wave two: the expansion of the South Central Texas RHIO into the collar counties around Bexar County. Wave three is the further expansion into the rural areas of the region served by GSAHC, and in some instances could be achieved simultaneously depending on the eagerness of the rural healthcare providers to become part of the South Central Texas RHIO. (See Figure 3: Timeline for Wave One)

Figure 3: Timeline for Wave One



Leadership:

In the first six month of wave one GSAC leadership must identify the RHIO spokesperson and begin getting the word out to all of the stakeholders. This phase must happen immediately and marks time zero on the time line in figure 3. Within the first six months GSAHC, through its 501(C) 3 GSAHF should begin to build the infrastructure that will be needed to support the RHIO in this early wave of development. In the following six months the leadership needs to focus on building a culture of service through training and education of internal employees and external stakeholders. Finally, in the last six month GSHAF leadership needs to build the governance structure in the forma of a board in order to instill a sense of community ownership and identity for the South Central Texas RHIO.

Finance:

Much of the financing strategies will overlap the leadership and identity building of the RHIO. As soon as the fledgling leadership forms they must begin exploring the financing opportunities that exist locally and from federal aid, such as a grant through AHRQ and through HRSA. In addition, through community outreach, the spokesman and once formed the governing board should begin examining the opportunities for alliances that have the potential for generating sustainment funds.

Alliance Building:

Once the governing board has started to take shape around the 12 month period and the initial start-up money has been secured, GSAHF should begin it alliance building campaign. In the following 12 months GSAHF should begin partnering with Metro Health and the Community Health Centers as, well as UTHSC and CHRISTUS Health.

Conclusions and Recommendations

The Greater San Antonio Hospital Council and the Greater San Antonio Healthcare Foundation meet many of the necessary criteria to begin the planning and execution of the South Central Texas RHIO. The GSAHF is a non profit organization with the purpose of promoting healthcare in the region and already has in place all of the needed connections to the community and the vast array of stakeholders that need to be involved in the implementation of such an organization. The GSAHC has important connections to the regions medical facilities from large health systems to small rural hospitals and can effectively bridge the gap between competition and health information sharing. In order for the South Central RHIO to meet the goals of controlling medical errors and improving healthcare delivery in the region, "the number one consideration is governance" (Thielst, 2006). Both GSAHC and GSAHF will have to continue to educate the myriad of stakeholders and ensure that the healthcare industry in Texas remains in the forefront of local, state, and national policy.

The implementation of the South Central Texas RHIO should be completed in a phased process consisting of three distinct waves. First, the planning phase should include education of stakeholders, development of a governance structure (drawing form both the healthcare industry and the general community), and the securing of initial seed money to develop the implementation strategies for the development of the RHIO in Bexar County. The second wave, in the implementation phase GSAHC should begin expansion of the RHIO in Bexar County, moving to the collar counties around Bexar County and finally in the third wave the South Central Texas RHIO should reach out to the more rural counties. The future development of the South Central Texas RHIO includes the coordination with other regions in Texas to create a statewide, interconnected healthcare information network.

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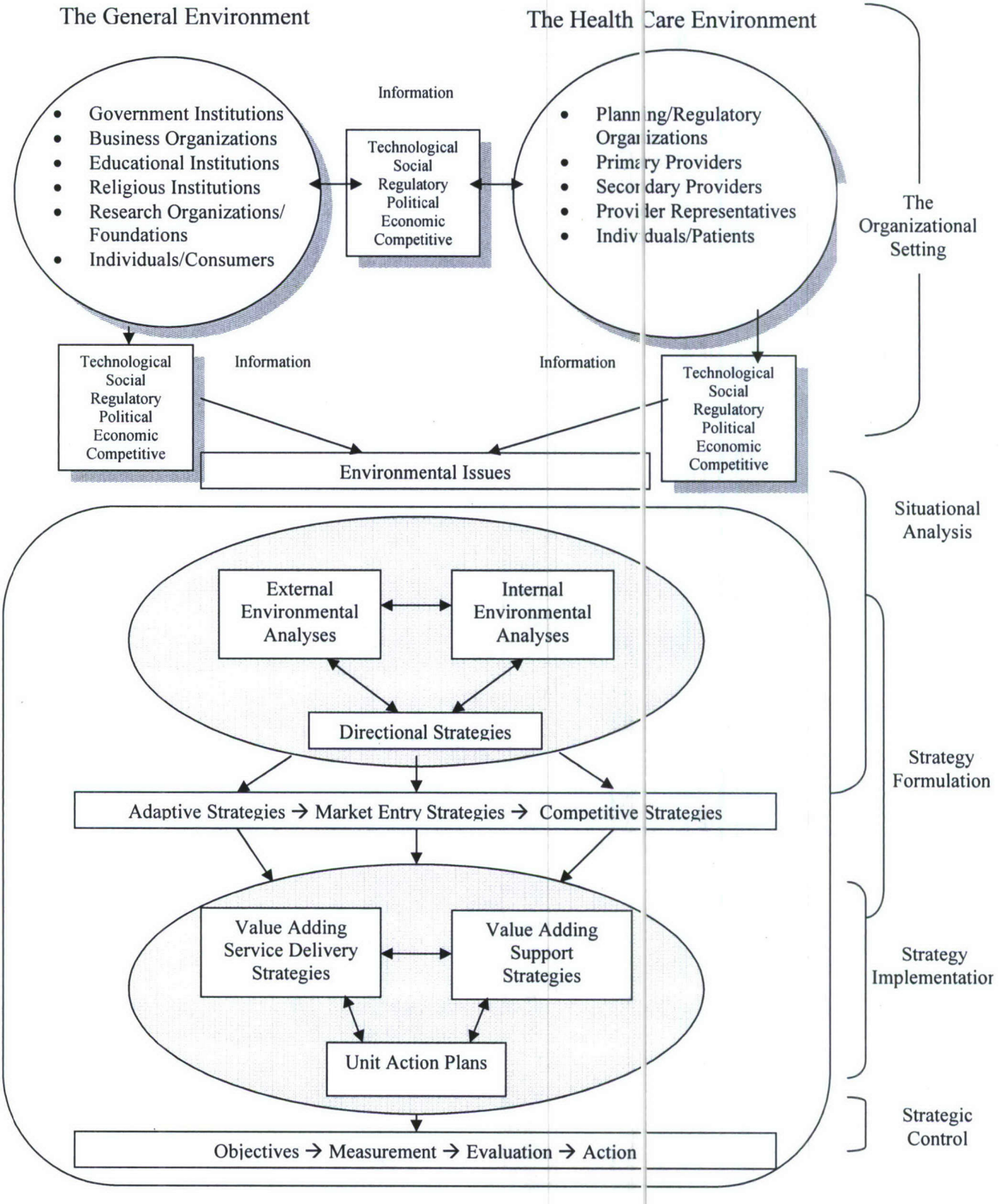
Appendix A: Thinking Map of the Strategic Management Process in HCOs



Appendix B: Preliminary SWOT Analysis

Strengths:

- Strong support from GSHAC board
- Physicians' Executive forum
- Strong support in local healthcare community
- Strong support from local political leaders
- Diverse membership of GSAHC

Weaknesses

- Financial ability of GSAHC to support the Implementation of RHIO
- Resource support
- Lack of operational RHIO experience

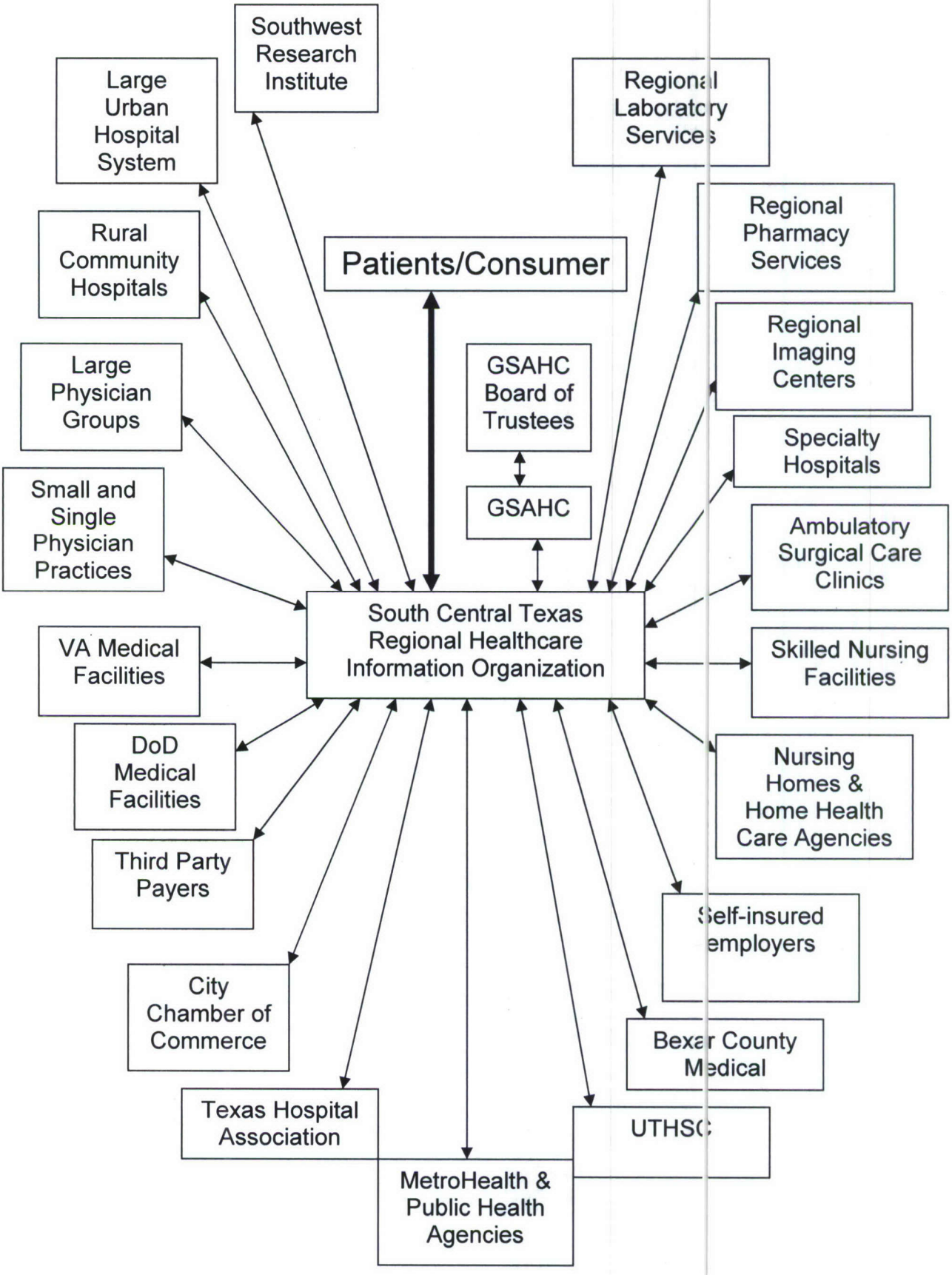
Opportunities:

- Presidential support of National Health Information Network and the implementation of EHRs
- ONCHIT's drive for regional implementation of health IT
- Joint venture possibilities with area technology leaders like SWBI and Johnson Controls
- Joint venture with UTHSC
- AHRQ grants
- State and Federal funding possibilities
- VA Electronic Health Record
- Improved data quality

Threats

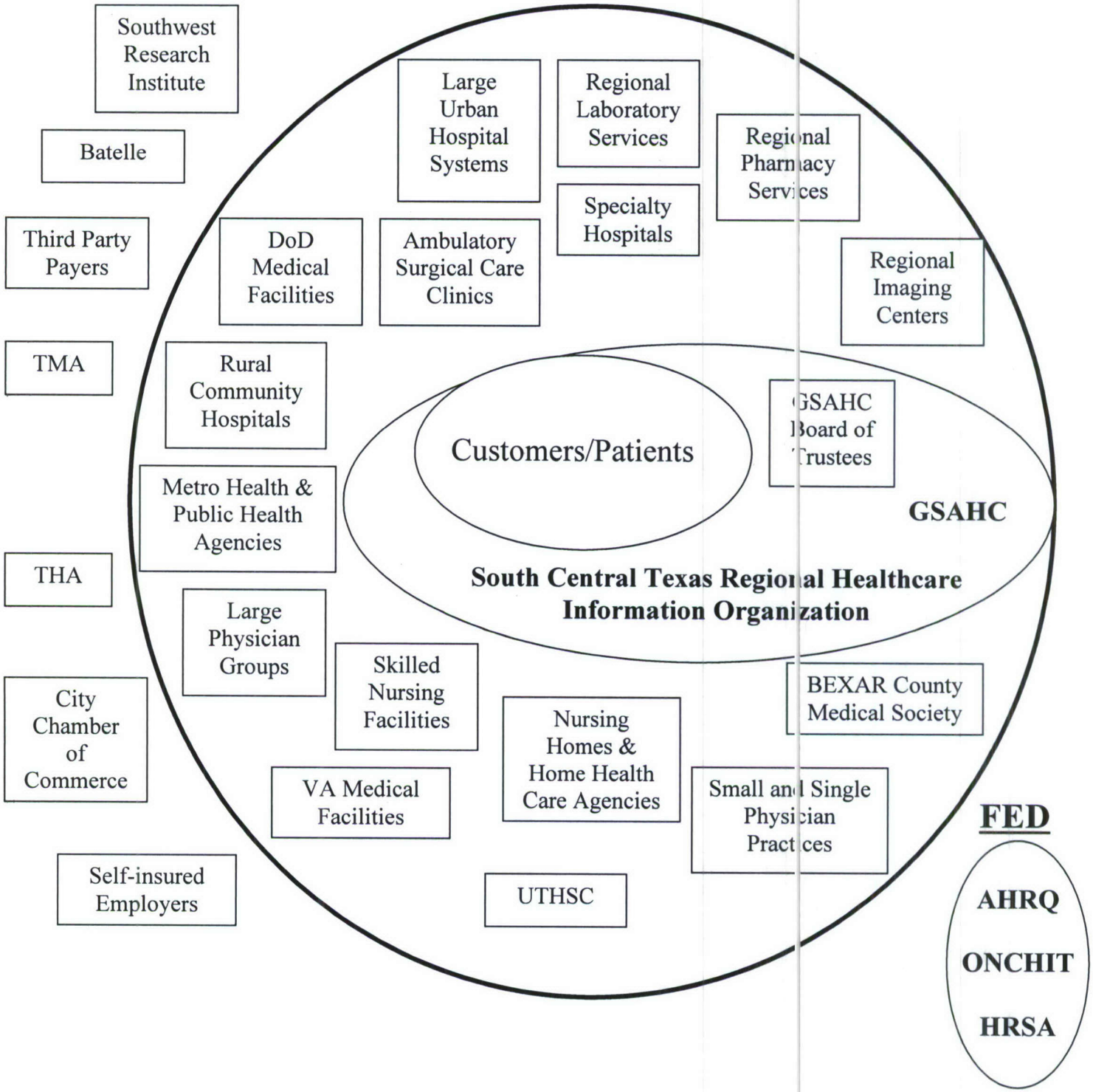
- Lack of support from Rural hospitals and physicians due to cost of implementation or start up
- Current Federal and State healthcare regulations
- No data beyond initial demonstration projects; no long term financial forecast
- Boarder health issues
- Growing uninsured population
- Area population growth

Appendix C: Stakeholder Analysis



Tab A: Stakeholder Strategic Thinking Map

Appendix C, Stakeholder Analysis



Appendix D: Preliminary Service Area Competition Analysis

Define the Service Categories

Large Urban Hospital Systems — Rural Community Hospitals
Healthcare Providers — Regional and Local Labs
Imaging Centers — Pharmacies
Third party Payers

Define Service Area

22 County region served by the Greater San Antonio Hospital Council

Service Area Profile

Healthcare personnel in 2002:

	Primary Care Physicians	Registered Nurses
Texas	33,094	132,084
GSAHC Region (Excluding Bexar County)	560	2,156
Bexar County	2,682	11,336

General Trends in Demographics

	Bexar Co	GSAHC Region	Texas
Total Population (2002):	1,442,244	2,056,721	21,779,893
Male (2002):	703,107	1,007,969	10,840,194
Female (2002):	739,137	1,048,752	10,939,699
65+ (2002):	149,356	233,499	2,139,554
Heart Disease Death Rates (2002):	248.4	239.3 (Average)	255.4
Cancer Death Rates (2002):	183.4	178.51(Average)	191.8
Live Births (2002)	25,023	33,742	372,369
Fertility Rate (2002)	76.00	73.68 (Average)	76.10

Community Health Indicators per 1000 Population

Healthcare Expense per Capita (2004):	$1436.70
Outpatient Visits:	1442.5
Inpatient Admissions:	111.9

Service Area Structure Analysis

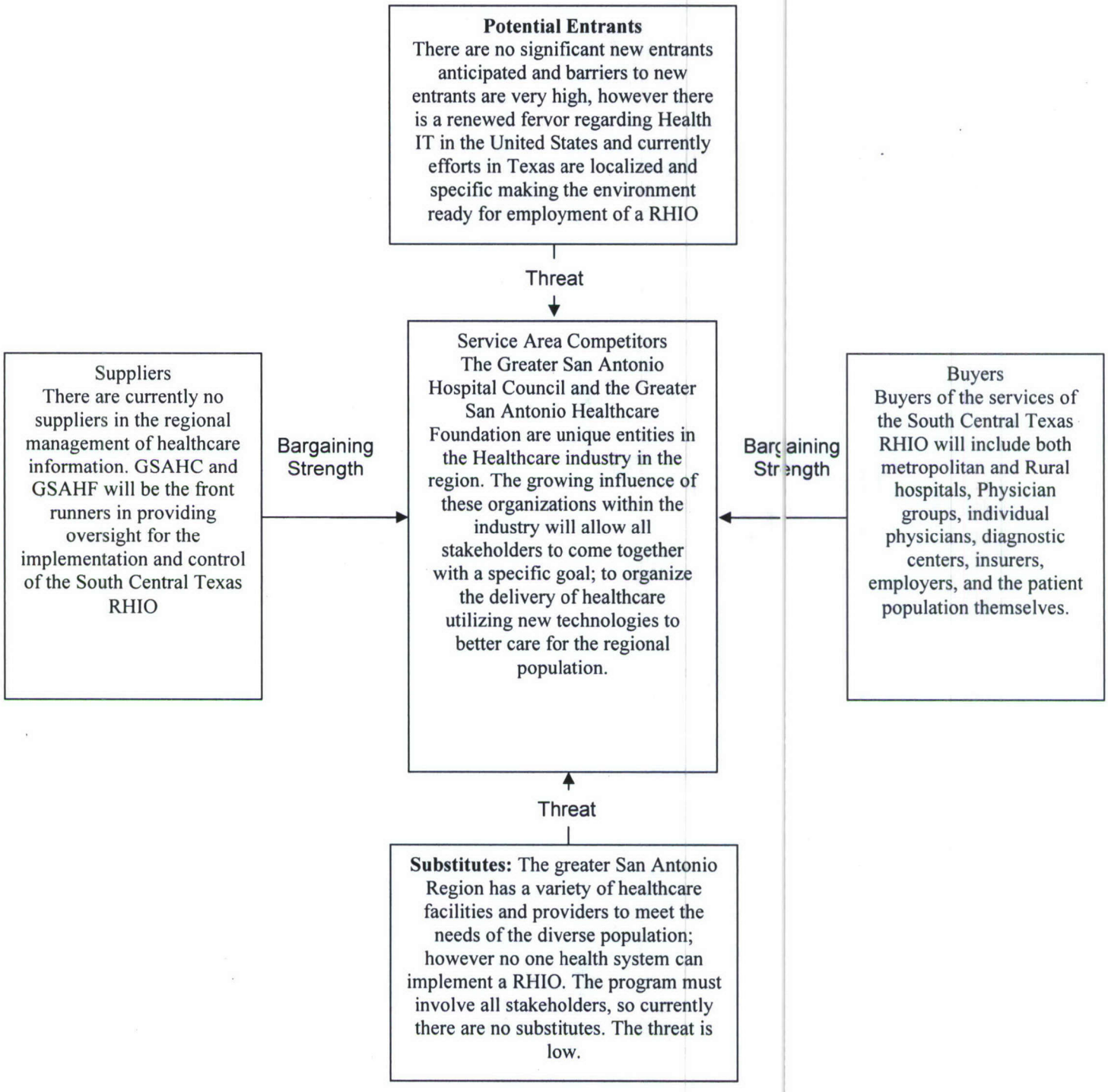
(See Tab A for Porter's Analysis)

Competitor Analysis

Local: University Healthcare System
Regional: N/A
National: The National Healthcare Information Network will rely on regional efforts to build and unite into the national network

Tab A: Preliminary Service Area Analysis (Porter's A nalysis

Appendix D, Service Area Competitor Analysi



Appendix E: Preliminary TOWS Analysis

	Internal strengths (competitive advantage) • Strong support from GSHAC board • Strong support in local healthcare community • Strong support from local political leaders • Diverse membership of GSAHC	**Internal Weakness** (competitive disadvantage) • Financial ability of GSAHC to support the Implementation of RHIO • Resource support
External Opportunities • ONCHIT's drive for regional implementation of health IT • Joint venture possibilities with area tech. leaders • Joint venture with UTHSC • AHRQ grants • State and Federal funding possibilities	 **FUTURE QUADRANT** Vertical Integration Market Development Product Development Penetration	**INTERNAL FIX-IT QUADRANT** Enhancement Market Development Related diversification
External Threats • Lack of support from Rural hospitals and physicians due to cost of implementation or start up • Current Federal and State healthcare regulations • No data beyond initial demonstration projects; no long term financial forecast • Boarder health issues	**EXTERNAL FIX-IT QUADRANT** Related Diversification Market Development Product Development Enhancement	**SURVIVAL QUADRANT** Retrenchment

Appendix F: SPACE Analysis

Factors Determining Environmental Stability		Score 0-6
Technological Changes	Many 0 1 2 3 4 5 6 Few	1
Rate of Inflation	High 0 1 2 3 4 5 6 low	4
Demand Variability	Large 0 1 2 3 4 5 6 Small	5
Price Rage of competing products/services	Wide 0 1 2 3 4 5 6 Narrow	2
Barriers to entry into market	Few 0 1 2 3 4 5 6 Many	2
Competitive pressure	High 0 1 2 3 4 5 6 Low	2
Price elasticity of demand	Elastic 0 1 2 3 4 5 6 Inelastic	5
Total		21
Average – 6		**-3**

Factors Determining Service Category Strength		
Growth potential	Low 0 1 2 3 4 5 6 High	5
Profit potential	Low 0 1 2 3 4 5 6 High	4
Financial stability	Low 0 1 2 3 4 5 6 High	2
Technological know-how	Simple 0 1 2 3 4 5 6 Complex	5
Resource utilization	Inefficient 0 1 2 3 4 5 6 Efficient	3
Capital intensity	High 0 1 2 3 4 5 6 Low	1
Ease of Entry into market	Easy 0 1 2 3 4 5 6 Difficult	1
Productivity, capacity utilization	Low 0 1 2 3 4 5 6 High	2
Total		23
Average		**2.9**

Factors Determining Competitive Advantage				Score
Market Share	Small	0 1 2 3 4 5 6	Large	5
Product Quality	Inferior	0 1 2 3 4 5 6	Superior	3
Product Life Cycle	Late	0 1 2 3 4 5 6	Early	1
Product Replacement Cycle	Variable	0 1 2 3 4 5 6	Fixed	4
Customer/patient loyalty	Low	0 1 2 3 4 5 6	High	3
Competition's Capacity utilization	Low	0 1 2 3 4 5 6	High	1
Technological Know-how	Low	0 1 2 3 4 5 6	High	5
Vertical Integration	Low	0 1 2 3 4 5 6	High	2
Total				24
Average -6				**-3**
Factors Determining Financial Strength				
Return on Investment	Low	0 1 2 3 4 5 6	High	2
Leveraging	Imbalanced	0 1 2 3 4 5 6	Balanced	1
Liquidity	Imbalanced	0 1 2 3 4 5 6	Balanced	0
Capital Required/Available	High	0 1 2 3 4 5 6	Low	1
Cash Flow	Low	0 1 2 3 4 5 6	High	1
Ease of exit from Market	Difficult	0 1 2 3 4 5 6	Easy	3
Risked involved in business	Much	0 1 2 3 4 5 6	Little	1
Total				9
Average				1.3

Tab A: SPACE GRAPH

Appendix F, SPACE Analysis